Illinois Mathematics and Science Academy
1500 Sullivan Road
Aurora, IL 60506-1000

Application For SIR Placement at Fermi National Accelerator Laboratory (FNAL)

(provide two recommendations – see rec form; please use a computer to complete this application legibly)

Name: Reynaga (Last) Julia (First) Veronica (Middle) Date: 1/7/15 (month / day / year)

Home Address: 3104 Bennett Pl (Number and Street)

Aurora (City) IL (State) 60502 (Zip Code) Home Telephone: (281) 943-4054 (include area code)

Person to be notified in an emergency: Julian Reynaga

Telephone (office hours): (630) 369-8344 (include area code) Telephone (other hours): (281) 384-4087 (include area code)

Student Cell Phone: (630) 870-2421 Year of Graduation: 2017

Suggested FNAL Advisor: Rene Padilla (Desired Start date: 1st week of June 2015)

Gender: ☐ male ☑ female Age: 15 Country of Citizenship*: Mexico

*Citizens other than from the United States must complete the following information:

Permanent Resident: ☐ Yes ☑ No

Place of Birth: Guadalajara, Jalisco, Mexico (City, State, Country)

Passport No.: G09811551 Expiration Date: 7/10/2018

All non-U.S. citizens must present their original, unexpired foreign passport on the first day of the program. Photocopies are not acceptable. Depending on your circumstances, you also must present:

- Form I-94 Arrival Departure Card that shows lawful admission to the U.S. and the end date of your "authorized stay", **PLUS**:
  - Form I-797 Notice of Action approving H-4, O-3, TD, E-3 or other nonimmigrant (temporary) visa status in the U.S. , OR
  - Form DS-2019 Certificate of Eligibility for J-2 status, OR
  - Form I-20 showing F-2 status, **OR**
- Greencard (Alien Registration Card, or I-551 Card) showing grant of lawful permanent resident status.

Describe your skills, abilities, proficiencies; please be honest.

Highest Math Level/Skill: Currently enrolled in Algebra 2 and Trigonometry. I also have an introductory understanding in calculus and a high skill level for geometry.

Skill with Statistics: I possess the ability to statistically analyze data through the use of central tendency, measures of variability, mean deviation, standard deviation, variance, standard error of mean, and confidence interval for the mean. I am also able to identify t-test distribution, its variances and derive null hypotheses.

Science Classes: Currently enrolled in Scientific Inquiries Physics, Scientific Inquiries Chemistry. I was also previously enrolled in Methods in Scientific Inquiry as well as Honors Biology.

Describe Your Laboratory Skills: I am able to conduct safety procedures and intermediate tool usage. I also possess the knowledge of LoggerPro data collector, chemical reactions procedures, microscope usage, social handling of human and animal test subjects, as well as general safety in the lab.

Prior Research (SIR) Experience (include advisor name/location): During previous years I have worked with FermiLab as part of my science fair project. I have particularly worked with Renee Padilla and Matthew Álvarez who guided me through the scientific process and helped me get the most out of my project.

Computer Proficiency: Please indicate your skill level for each of the below.

	none	**introductory**	**intermediate**	**advanced**
Basic			x	
C/C++	x			
Fortran	x			
Java		x		
Other Languages(list)				X (Spanish)
Mathematica		x		
Matlab	x			
Other Programs (list)			X (Wolfram Alpha, LoggerPro)	
Unix(Linux)	x			
Windows			x	
Mac		x		
Other OS (list)	x			

Rank Your Interests (Do not rank any area that you would not be willing to pursue an investigation in.)

___Accelerator Component Testing, Theory and Design
___Astrophysics Data Analysis, Detector Development, Theory
_2_Computer Networking, Computing for Analysis, Data Analysis of Experiments, Computer Simulation and Modeling
_3_Detector Design and Testing
_1_Electronics Design and Testing
_5_Instrumentation and Diagnostics
___Radiofrequency (RF) Systems
___Magnet Systems
_4_Mechanical Design and Development
___Particle Physics Phenomenology
___Particle Physics Theory
___Superconducting Technology

Attach an application that includes the following items:

- Academic honors and awards that you have received. Please limit to ten or less honors/awards that you feel are the most significant.
- Extracurricular activities, interests, and any leadership role(s). Please limit to ten or less activities/interests that you feel are the most significant.
- Explain why research at FNAL would be a benefit to you and what you expect from participation in an investigation at FNAL. (Limit your answer to 250 words or less.)
- What would you tell a FNAL scientist about yourself so that you would be selected to work with her or him? (Limit your answer to 250 words or less.)
- Explain one exceptional experience you had with STEM in the last year. (Limit your answer to 250 words or less.)

Placement at FNAL also requires:

- Fermilab Visitor ID Form (form attached)
- Proof of Medical Coverage (form attached)

- Work Permit (required of students who are under 16 years of age)
- Documentation of Immigration Status (see first page)
- Authorization for Issuance of an ID Card (form attached)
- Student Registration (form attached)

- Note that some information is repeated on the attached forms, which will be filed with the appropriate offices at FNAL once a student has a specific placement.

I understand that by submitting this application for placement at the **Fermi National Accelerator Laboratory** *I may not apply for or seek other SIR opportunities until a decision has been made about this application. Placement for SIR at FNAL is not guaranteed by submission of this application.*

[signature]	3/21/15	Julia Kyungga	3/21/15
Signature of Parent/Guardian	Date	Signature of Applicant	Date

Academic Honors and awards:
Regional Science Fair Semi-finalist
A-honor roll
Presidential Excellence Award
Presidential Achievement Award
Illinois Junior Academy of Science Semi-finalist
Metea Valley High School Achievement Award

Clubs and Leaderships:
Science Technology Club
Robotics Club
Summer Math Advanced Placement
Illinois Junior Academy of Science (Science Fair Competition)
Math Team
Mu Alpha Theta math club
Robotics Symposium at Illinois Institute of Technology
Read to Lead Sophomore Representative
Medical Society

Explain why research at FNAL would be a benefit to you and what you expect from participation in an investigation at FNAL

I believe the effect scientific inquiry research has had on the world is due to the willingness of others to share their knowledge. The process of scientific and inquiry has been my passion ever since I was young and has taught me the majority of the knowledge I currently possess. However, it could not have been possible without the willingness of others to share their knowledge with me.

FermiLab has been one of the places that was willing to share its knowledge with others including myself. Due to this, I have grown to be more educated and my passion for science has developed more and more throughout the years. I have been able to apply my knowledge to various situations which will help the world and advance the human condition. FermiLab is a unique place where I can learn about my passion and with the knowledge I gain, I can apply it to the future and solve problems which will advance the human condition and improve the current situations in the world. FermiLab is one of the few particle accelerators in the world and with the unique engaging,learning environment, I will be able to learn things I would have never been capable of learning in other facilities. The participation in an investigation at FermiLab is a life changing opportunity which will allow me to educate myself more on what I want to pursue and in the future, inspire other individuals towards science to make the world a better place.

What would you tell a FNAL scientist about yourself so that you would be selected to work with her or him?

I am currently attending the Illinois Mathematics and Science Academy (IMSA) where I am planning on taking multiple science and math classes which will aid me in various situations including problem solving based situations. I am also currently enrolled in multiple extracurricular activities for which I will be applying to become a board member including Mu Alpha Theta. This club promotes the awareness of real life mathematics and organizes events with other organizations and high schools to inspire younger students to engage in mathematics. The reason for my application to IMSA is due to the fact that the public school I previously attended did not promote science or mathematics and I believe these subjects are substantial for the benefit of our world. Although, IMSA has given me the resources to learn and expand my knowledge, I am very excited for the opportunity to conduct research at FermiLab because I will be able to expand my knowledge even more through a unique and different environment.

An opportunity like conducting a research with professionals at FermiLab is unique and I plan on taking full advantage of it. I am always eager to learn and I am inquisitive to use the resources given effectively. Coming from a country where the resources to pursue a dream are limited, I am willing to work hard and take

what I am being taught to a whole new level where I will be able to improve the world in the future and carry the mission FermiLab will have taught me.

Explain one exceptional experience you had with STEM in the last year.

In the past year, I was able to participate in the regional science fair and present my project to judges who gave me feedback. My project consisted of solar energy and tested the best angle a solar panel could be placed in order to produce the most light energy. This project took months of preparation and I received mentorship from people with more expertise in order to get the most out of my research. The information and mentorship was received by mentors at FermiLab as well STEM Club experts. I received the "semi-finalist" recognition and I gained knowledge of the conservation of energy. This experience taught me useful information about the real world. The information about how the world works and how natural causes, which seem normal in ordinary life, have a complicated process led me to want to keep learning more about the world.

Student Name: REYNAGA, Julia Veronica
Date of Birth: 07/29/1999
Entry Date: 08/14/2014

Illinois Mathematics and Science Academy
School Code:140177

		Sem1	Sem2	Credit
Y14-15				
Grade 10	Literary Explorations I	A-		0.50
Grade 10	Literary Explorations II		A-	0.50
Grade 10	American Studies	B	B+	1.00
Grade 10	Mathematical Investigations II	B-		0.50
Grade 10	Mathematical Investigations III		C	0.50
Grade 10	Scientific Inquiries - Chemistry		B	0.50
Grade 10	Scientific Inquiries - Physics		B	0.50
Grade 10	Scientific Inquiries - Biology	B-		0.50
Grade 10	Methods in Scientific Inquiry	B		0.50
Grade 10	Moving and Learning	A	A	0.50
Grade 10	Mandarin Chinese I	A-	B	1.00

Diane M Stegmayer

Registrar 06/10/2015

Academic Program
All IMSA courses are college preparatory.

Explanation of Grades

A	Exceeds course requirements
B	Meets course requirements
C	Needs improvement
D	Does not meet course requirements; no Academy credit awarded
I	Incomplete, course requirements not completed when grades were issued
WF	Withdrawn from course with failing grade; no Academy credit awarded
W	Withdrawn from course; no Academy credit awarded

Pass/Fail Options

P+	Exceeds course requirements (Pass with Distinction, used only in Independent Study and Student Inquiry and Research courses)
P	Meets course requirements; Academy credit may/may not be awarded depending on course grading criteria
F	Does not meet course requirements for course taken pass/fail; no Academy credit awarded

Intersession (one week non-credit course)

S	Satisfactory completion of requirements
U	Unsatisfactory completion of requirements

GPA/Class Ranking Policy
In light of IMSA's selective admission process and in order to promote collaborative exploration and discovery, the Academy does not compute grade point averages and class rankings.

Standardized Test Scores
Standardized test scores are provided by the student.

Student Inquiry and Research
(Inquiry and Mentorship) includes on-campus and off-campus experiences in which students plan, investigate, analyze, and communicate in-depth scholarly investigation, either guided or directed, by scientists, scholars, and/or educators.

TALENT (Total Applied Learning for Entrepreneurs)
Is a program that promotes entrepreneurial applied science and technology.

Federal and State Constitution Requirements
Are fulfilled with successful completion of American Studies.

Physical Education Requirement
Is fulfilled with successful completion (pass) of physical education or wellness.

Notice to persons or agencies receiving student records:
Section 438(b)(4)(B) of U.S. Public Law 93-380 requires that this pupil record information be transferred to you only on condition that you will not permit any other party to have access to it without the written consent of a parent/guardian or eligible student.

IMSA®
Illinois Mathematics and Science Academy
1500 Sullivan Road
Aurora IL 60506
Phone 630-907-5066 Fax 630-907-5922

Illinois Mathematics and Science Academy

The World's Leading Teaching and Learning Laboratory for Imagination and Inquiry

Student Inquiry and Research
Recommendation Form

Student Name Julia Reynaga graduation year 2017

Recommender Anita White awhite@imsa.edu
(name) (email)

Recommender: The student listed above wishes to participate in the Student Inquiry and Research (SIR) Program. SIR advisors are frequently requesting additional information so your assistance is needed in recommending and evaluating students. This completed form, as a pdf file, may be sent to off-campus individuals to assist with best placement of students.

1. Please rate the student on each of the following criteria, with 5 being highest and 1 being lowest, based on your experiences with IMSA students.

Criteria	5	4	3	2	1	No basis for judgment
Motivation for the investigation		x				
Intellectual potential			x			
Ability to analyze/problem solve			x			
Teamwork skills		x				
Perseverance		x				
Maturity		x				
Works independently		x				
Communication skills		x				
Integrity		x				
Overall judgment		x				

Please comment on the preparedness of the student to participate in an independent investigation.

Julia is not the strongest students in SI Chemistry, however, she is one of the hardest working. She comes faithfully to help sessions and does not leave until she better understands the concepts. Julia was also a part of the Promise program. She was one of the top students there and made a very good impression on the faculty and staff. I believe with the right project, Julia will do very well. She definitely will work hard and do her best.

Is there anything else that you feel a potential advisor should know about this student?

NO.

Illinois Mathematics and Science Academy

The World's Leading Teaching and Learning Laboratory for Imagination and Inquiry

Student Inquiry and Research
Recommendation Form

Student Name Julia Reynaga_____ graduation year __2017__

Recommender Eric Smith esmith@imsa.edu
(name) (email)

Recommender: The student listed above wishes to participate in the Student Inquiry and Research (SIR) Program. SIR advisors are frequently requesting additional information so your assistance is needed in recommending and evaluating students. This completed form, as a pdf file, may be sent to off-campus individuals to assist with best placement of students.

1. Please rate the student on each of the following criteria, with 5 being highest and 1 being lowest, based on your experiences with IMSA students.

Criteria	5	4	3	2	1	No basis for judgment
Motivation for the investigation	x					
Intellectual potential	x					
Ability to analyze/problem solve	x					
Teamwork skills	x					
Perseverance	x					
Maturity	x					
Works independently	x					
Communication skills	x					
Integrity	x					
Overall judgment	x					

Please comment on the preparedness of the student to participate in an independent investigation.

I highly recommend Julia. She's shown maturity and sound judgment all year.

Is there anything else that you feel a potential advisor should know about this student?